AMSAT News Service Weekly Bulletins
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Posted: Tue, Jan 9, 1990 9:18 PM GMT Msg: NGJA-4136-8338
From: CDUNCAN
To: is
CC: w1aw
Subj: ANS-008

SB ALL @ AMSAT $ANS-008.01
MICROSAT - UOSAT LAUNCH DELAYED

HR AMSAT NEWS SERVICE BULLETIN 008.01 FROM AMSAT HQ
SILVER SPRING, MD JANUARY 1, 1990
TO ALL RADIO AMATEURS BT

Late word from the Ariane launch complex in Kourou, French Guiana is that the SPOT 2 - Microsat - UoSat launch will be delayed by at least two additional weeks. Currently, the earliest possible launch date is given as 24 January 90.

This delay results from a problem that has been discovered in the primary SPOT 2 payload. It will be necessary to "de-stack" the fairing and payload assembly and remove the SPOT 2 spacecraft in order to replace an onboard magnetic tape recorder.

The Microsats and UoSats will be left attached to the ASAP mounting structure but the solar panel covers will be remounted and the structure will be placed under a protective cover while this work is carried out.

Currently Dave Cowdin, WD0HHU, representing AMSAT-NA; Junior DeCastro, PY2BJO, representing BRAMSAT; and Maarten Meerman, G7DQE, representing UoSat are in Kourou closely monitoring mission status and tending to the six amateur payloads.

/EX
SB ALL @ AMSAT $ANS-008.02
AMSAT LAUNCH INFORMATION NETWORK

HR AMSAT NEWS SERVICE BULLETIN 008.02 FROM AMSAT HQ
SILVER SPRING, MD JANUARY 1, 1990
TO ALL RADIO AMATEURS BT

The AMSAT Launch Information Network is on hold as is the Microsat - UoSat launch. The plan is still to carry out the ALINS activity from 0100 to 0230 UTC on the day of launch.

Frequencies of major HF re-transmissions around North America and around the world will be re-published the week before the next scheduled launch attempt.

The deadline for obtaining a reservation on the call-in teleconference network bridge has been extended through Sunday January 21 on a first come first served basis. After that date, slots will no longer be available. To reserve a position for your repeater or linked facility call Courtney Duncan, N5BF, at 818-957-8455. Be prepared to leave your name, address, phone number, repeater call, frequency, and coverage area on an answering machine. All participants will be contacted not sooner than two or three days before launch with the telephone number and time to call in to the bridge.

Rich Ensign, N8IWJ, reports that launch video will be carried on Spacenet 1, Transponder 4 (Channel 7). Rich has recently confirmed this through the Arianspace office in Washington, DC.

In addition to the launch audio itself, the ALINS programming will carry information from and commentary by radio amateurs who are involved in the Microsat effort.

/EX
SB ALL @ AMSAT $ANS-008.03
PRE-LAUNCH MICROSAT KEPLERIAN ELEMENT SET

HR AMSAT NEWS SERVICE BULLETIN 008.03 FROM AMSAT HQ
SILVER SPRING, MD JANUARY 1, 1990
TO ALL RADIO AMATEURS BT

SPOT-2 / MICROSAT / UOSAT KEPLERIAN ELEMENT SET

If the SPOT-2/Microsat/UoSat launch occurs on 26 January 90, the following element set may be used to estimate satellite positions for the first few days. Nominal launch is expected to be around 0135 UTC.

If the launch occurs on another day, simply add 0.98561226 degrees of RAAN per day to the listed value.

Following deployment, all seven satellites will be in close proximity for several days. By the end of the first week, users with high gain antennas will begin to find the cumulative position differences per satellite growing large enough to cause significant pointing errors. All users will begin to notice the changes in AOS and LOS time.

Element sets resulting from on-orbit measurements will be provided ASAP shortly after launch and for the first several days when available until data from the standard sources becomes available.

Satellite: SPOT-2, UO-D, E, Microsat-A, B, C, D
Catalog number: not yet assigned
Epoch time: 90026.0816319
Element set: pre-launch
Inclination: 98.738 deg
RA of node: 101.8983 deg
Eccentricity: 0.00134
Arg of perigee: 110.95 deg
Mean anomaly: 297.18 deg
Mean motion 14.1988896 rev/day
Decay rate: 1.0e-06 rev/day^2
Epoch rev: 0

/EX
SB ALL @ AMSAT $ANS-008.04
MICROSAT AND UOSAT FREQUENCIES

HR AMSAT NEWS SERVICE BULLETIN 008.04 FROM AMSAT HQ
SILVER SPRING, MD JANUARY 1, 1990
TO ALL RADIO AMATEURS BT

MICROSAT AND UOSAT FREQUENCIES AND DEPLOYMENT ORDER

The following are the Microsat and UoSat listening frequencies

and modes listed in order of deployment. The OSCAR numbers listed are, of course, tentative and assume a succesful launch ahead of FO-1B.

Spacecraft	OSCAR number	Frequency, MHz	Mode
UoSat D	UO-14	435.070	9600 bps AFSK AX.25
UoSAT E	UO-15	435.120	9600 bps AFSK AX.25
PACSAT	PO-16	437.025	1200 bps PSK AX.25
DOVE	DO-17	145.825	1200 bps AFSK AX.25 (FM)
WEBERSAT	WO-18	437.075	1200 bps PSK AX.25
LUSAT	LO-19	437.150	1200 bps PSK AX.25
LUSAT - CW	LUSAT	437.125	12 WPM CW telemetry

Packet transmission from DOVE may be monitored with an unmodified TNC-2 or clone, using an FM receiver. The other microsats (PACSAT, WEBERSAT, and LUSAT) require an SSB receiver and TNC with a 1200 bps PSK demodulator (FO-12 compatible, NOT the 400 bps PSK demodulator used with AO-10 and AO-13). The 9600 bps modulation scheme used by the UoSats is compatible with K9NG and other similar 9600 baud modems commonly used in terrestrial packet applications.

/EX
SB ALL @ AMSAT $ANS-008.05
MICROSAT LAUNCH TIMELINE

HR AMSAT NEWS SERVICE BULLETIN 008.05 FROM AMSAT HQ
SILVER SPRING, MD JANUARY 1, 1990
TO ALL RADIO AMATEURS BT

AMSAT-NA Vice President for Field Operations Jack Crabtree, AA0P, recently obtained the following preliminary launch sequence timeline from Dave Cowdin, WD0HHU, AMSAT's man on the scene in Kourou, French Guiana. This schedule should be followed, at least approximately, regardless of the time and day of launch. All times are Mission Elapsed Time.

00:00	Ignition (Time is minutes:seconds)
00:04	Launch vehicle clears gantry
02:34	1st stage fuel expended
02:39	1st stage separation
02:42	2nd stage ignition
03:40	Fairing separation
04:48	2nd stage fuel expended
04:48	2nd stage separation
04:53	3rd stage ignition
16:44	3rd stage fuel expended
16:49	3rd stage separation
17:06	SPOT II separation
20:06	UOSAT E separation
20:07	UOSAT F separation
21:01	Pacsat separation
21:02	DOVE separation
21:03	WEBERSAT separation
21:04	LUSAT separation

Dave reminds us that with this configuration of the Ariane IV, there are no solid or liquid strap-on boosters. He also reports that there was a surprising amount of room left in the payload fairing in-spite of the seven spacecraft mounted in it. It was necessary to add 800 pounds of lead ballast because of excess lift capability.

/EX
SB ALL @ AMSAT $ANS-008.06
PACSAT TELEMETRY EXAMPLES

HR AMSAT NEWS SERVICE BULLETIN 008.06 FROM AMSAT HQ
SILVER SPRING, MD JANUARY 1, 1990
TO ALL RADIO AMATEURS BT

The following is an actual frame captured during the final test for
AMSAT-NA at Kourou. This is from a regular TNC in monitor mode
using a PSK demodulator.

PACSAT-1>TIME-1:PHT: uptime is 000/00:02:50. Time is Mon Dec 11 10:30:34 1989

PACSAT-1>TLM:00:FF 01:93 02:FF 03:75 04:FF 05:9D 06:82 07:7F 08:68 09:8E 0A:A4
0B:9A 0C:E8 0D:DB 0E:00 0F:30 10:DA 11:82 12:00 13:54 14:7E 15:7C
16:81 17:7A 18:7D 19:7A 1A:7D 1B:7B 1C:7A 1D:7A 1E:28 1F:5C 20:8B

PACSAT-1>TLM:21:7B 22:74 23:24 24:21 25:29 26:00 27:00 28:00 29:00 2A:00 2B:00
2C:00 2D:26 2E:00 2F:7C 30:7B 31:7B 32:3E 33:00 34:7D 35:7D 36:7D
37:7D 38:7D 39:9D 3A:01

PACSAT-1>STATUS: 00 00 00 80 B0 18 55 02 00 80 00 00 B0 00 00 00 00 00 00 00

PACSAT-1>WASH:wash addr:26c0:0000, edac=0xac

Explanations:

Telemetry is sent once each 10 seconds. The time message is the first in
each cycle, the wash message is the last. Note that the wash message does
not contain a trailing CR.

The TLM block entries are in the format CC:NN where CC is the channel
number (in hexadecimal) and NN is the telemetry count for that
parameter, also in hexadecimal, with a range of 00 to FF (0 to 255
decimal). Equations for converting these values into engineering units
have been released and are being included in preliminary telemetry
decoding software.

The uptime value is the days/hh:mm:ss since the software was last loaded.
Onboard software uses this for timing since it is never changed. The
other time value is UTC, and can be corrected for drift from the ground.

There are various other messages that come out in response to uplinked
commands, so your telemetry programs should only try to parse packets that
are "to" TLM, STATUS, or TIME-1.

This format is designed to give something interesting to watch to the
largest number of people possible, even those without additional software.
In the future a more compact binary telemetry format will be used for
the high-rep rate telemetry, with only occasional frames in the above format.
This is to conserve downlink time.

Submitted by Harold Price, NK6K

An IBM compatible diskette with all available relevant information and
a decoding program is being mailed to command stations and Command
Station Development Program team members at this time. Others may
obtain copies from AMSAT HQ.

/EX
SB ALL @ AMSAT $ANS-008.07
OPERATIONS NET SCHEDULE

HR AMSAT NEWS SERVICE BULLETIN 008.07 FROM AMSAT HQ
SILVER SPRING, MD JANUARY 1, 1990
TO ALL RADIO AMATEURS BT

The following is the schedule for Operations Nets for the next
several weeks.

Day	UTC	Day U.S.	Freq.	NCS	Guest
20 Jan 90	1400	Saturday	435.970	N5BF	KO5I
03 Feb 90	1345	Saturday	145.950	N5BF	Early Microsat News
10 Feb 90	1545	Saturday	435.970	N5BF	TBA
18 Feb 90	0530	Sat/Sun	145.950	N5BF	TBA

The 20 January session will feature AMSAT President Doug
Loughmiller, KO5I.

/EX
SB ALL @ AMSAT $ANS-008.08
SATELLITE OPERATING SCHEDULE

HR AMSAT NEWS SERVICE BULLETIN 008.08 FROM AMSAT HQ
SILVER SPRING, MD JANUARY 1, 1990
TO ALL RADIO AMATEURS BT

OSCAR Satellite Operating Schedule

AO-13 TRANSPONDER SCHEDULE

MODE B	MA 000 TO MA 110	
MODE JL	MA 110 TO MA 145	
OFF	MA 145 TO MA 150	BAHN LAT -0.9 deg
S BEACON	MA 140 TO MA 145	BAHN LON 179.4 deg
MODE S	MA 145 TO MA 160	
MODE B	MA 150 TO MA 255	
OMNI ANT	MA 225 TO MA 035	

AMSAT OSCAR-10 is currently available for whole orbit operation
via the mode B transponder. Bahn coordinates estimated for AO-10
as of 07 January 90 are: BAHN LAT -17.0 deg BAHN LON 38.0 deg.

/EX
SB ALL @ AMSAT $ANS-008.09
ZRO TEST SCHEDULE

HR AMSAT NEWS SERVICE BULLETIN 001.09 FROM AMSAT HQ
SILVER SPRING, MD JANUARY 1, 1990
TO ALL RADIO AMATEURS BT

ZRO Test Schedule

The following is a schedule of Mode B ZRO test times.

Saturday	January	13, 1990	at 12:00 UTC	MODE B	145.840 MHz
Saturday	January	20, 1990	at 15:30 UTC	MODE B	145.840 MHz

ZRO brochures are available from WA5ZIB, Andy MacAllister, AMSAT
V.P. of User Operations, 14714 Knightsway Drive, Houston, TX
77083 for an S.A.S.E. with one unit of postage.

/EX

Posted: Wed, Jan 10, 1990 3:39 AM GMT Msg: BGJA-4137-2472
From: TCLARK

To: is
Subj: TAPR Annual Meeting Announcement

SB TAPR @ USA < W3IWI $31481_W3IWI
TAPR Annual Meeting
R:900110/0052z 31481@W3IWI.MD.USA [Balto/Wash MD/DC/VA/DE] Z:21029

ANNUAL TAPR MEETING - TUCSON AZ - SATURDAY AND SUNDAY - FEBRUARY 24th - 25th

The TAPR annual meeting will be held at the Inn At The Airport, 7060 South Tucson Boulevard, Tucson AZ, 85706. The Inn is a very short distance from the airport terminal, walking distance if you're so inclined. Special rates for the meeting are <cheap> for either one or two in a room. Breakfast is included as well as a late afternoon cocktail hour. Our room block will be released on February 9, 1990 so get your reservations in prior to that date. Call 1-800-772-3847 if outside Arizona, 602 746-0271 if in Arizona, or write the above address. Cite The TAPR Conference to assure rates.

There will be a registration fee of <not much>. This fee will help to defray meeting costs plus lunch and private dinner at the hotel. Since breakfast and cocktail hour are provided to those staying at the hotel the overall cost is quite nominal. The Sunday session should be completed by noon or shortly thereafter for those planning return travel on Sunday afternoon.

Networking, that's the packet radio buzzword for the early '90s. And that will be one of the main topics at the 1990 TAPR annual meeting. Equally exciting will be discussions by members of the Microsat team describing and graphically displaying the construction, pre/launch and launch activity of the Microsats and their UoSAT cousins.

Expect to see many of the manufacturers of packet equipment present with displays and demos. Some have already contacted TAPR for arrangements. All the new TAPR kits will be shown and discussed.

Those wishing to be on the speaking agenda should advise the TAPR office as soon as possible. The Sunday session should be concluded near or shortly after noontime for those planning afternoon departures.

[W3IWI note: Actual <prices> were deleted from the TAPR-provided text to avoid problems with commercialism]

/EX

Posted: Sat, Jan 13, 1990 5:06 AM GMT Msg: GGJA-4140-3157
From: TCLARK
To: is
Subj: Launch Change -- for packet

SB ALL@AMSAT < W3IWI $32146_W3IWI
MICROSAT/UoSAT: Launch now Jan.21
R:900113/0353z 32146@W3IWI.MD.USA [Balto/Wash MD/DC/VA/DE] Z:21029

The following news was received from the crew in Kourou on Jan.12. Note that the Jan.21 UTC date puts the launch at 20:35 EST on Saturday night, Jan.20.

Arianespace announced today that the launch of V35 is now set for January 21, 1990 at 01:35 UTC. The composite will be moved to the launcher on Monday, January 15th.

Arianespace is making special provisions for the MICROSATs and UoSATs

so that we don't have to go through another 21.5 hours without battery charging like the last time. The most we will be off is about 12-14 hours. After we reconnect at the block house, we will charge for 16 hours.

The replacement tape recorder for SPOT-2 was installed yesterday and the SPOT people were pleased with the functional testing. More importantly, NOTHING DROPPED ON THE MICROSATs or UoSATs during this critical repair operation. The work on SPOT has now finished, and we have removed the protective covers from our satellites again.

73's WD0HHU, PY2BJO, G7DQE
/EX